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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,199	12/11/2001	Heather N. Bean	100110043-1	4347
7590 11/26/2008 HEWLETT-PACKARD COMPANY Intellectual Property Administration P.O. Box 272400 Fort Collins, CO 80527-2400				
EXAMINER HANNETT, JAMES M				
ART UNIT 2622		PAPER NUMBER		
MAIL DATE 11/26/2008		DELIVERY MODE PAPER		

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* HEATHER N. BEAN and CHRISTOPHER A. WHITMAN

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Appeal 2008-4418  
Application 10/016,199  
Technology Center 2600

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Decided: November 26, 2008

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Before MAHSHID D. SAADAT, JOHN A. JEFFERY, and CARLA M.  
KRIVAK, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 44-58. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

## STATEMENT OF THE CASE

Appellants invented a method and device for managing battery power. The method includes operating a device until battery failure occurs. Upon attempting to restart the device, the method determines whether there is sufficient charge on the battery to operate. If the charge is insufficient, the device is powered down using the battery's residual charge and disabled until the battery has been recharged or replaced. The device includes logic to perform this process and extend battery life.<sup>1</sup> Independent claim 44 is reproduced below:

44. A method for managing power in a battery-operated device, comprising:

allowing the device to operate until a battery failure occurs, the battery failure comprising a condition in which the battery's charge drops below a level required to operate the device;

determining, upon an attempt to restart the device after the battery failure, that the battery has insufficient charge to support further operation of the device;

shutting down the device properly using residual charge in the battery, the battery having recovered sufficiently during a brief period between the battery failure and the attempt to restart the device to support shutting down the device properly; and

disabling further operation of the device until the battery has been recharged or replaced.

The Examiner relies upon the following as evidence in support of the rejection:

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<sup>1</sup> See generally Spec. 2:24-3:5, 7:3-10, and 7:20-8:2.

Anderson	US 5,790,878	Aug. 4, 1998
Tate	US 6,687,839 B1	Feb. 3, 2004 (filed May 31, 2000)

Claims 44-58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson and Tate.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer<sup>2</sup> for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments, which Appellants could have made but did not make in the Briefs, have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

The Examiner finds Anderson teaches the step of allowing the device to operate until the battery's charge drops below a level required to operate the device recited in independent claim 44 (Ans. 3). With the exception of the "using the residual charge in the battery" limitation, the Examiner additionally relies on Anderson to teach the determining and shutting down steps (Ans. 3-4). Appellants argue that Anderson does not disclose allowing the device to operate until the battery's charge drops below a level required to operate the device (App. Br. 7-8; Reply Br. 2-3). Appellants contend the device stops operating at a level incrementally higher than the minimum operating voltage and powers down prior to or before battery failure occurs (App. Br. 7-8; Reply Br. 3).

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<sup>2</sup> Throughout this opinion, we refer to: (1) the Appeal Brief filed April 25, 2006 and supplemented November 2, 2007; (2) the Examiner's Answer mailed September 7, 2007; and (3) the Reply Brief filed November 7, 2007.

### ISSUES

(1) Have the Appellants shown the Examiner erred in finding Anderson teaches the step of allowing the device to operate until a battery failure occurs or when the battery's charge drops below a level required to operate the device in rejecting claim 44 under § 103?

(2) In rejecting the independent claims under § 103, has the Examiner erred in finding the combination of Anderson and Tate teaches the steps of:

- (a) determining, upon an attempt to restart the device after the battery failure, that the battery has insufficient charge to support further operation of the device, and
- (b) shutting down the device properly using residual charge in the battery, the battery having recovered sufficiently during a brief period between the battery failure and the attempt to restart the device to support shutting down the device properly?

### FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. The Specification defines "battery failure" as "a condition in which the battery charge drops below the level required to operate the device" (Spec. 3:1-2).
2. Anderson discloses a method of powering down a device and recovering from a power failure (Anderson, col. 2, ll. 19-25 and col. 6, ll. 19-20).

3. Anderson shows at step 650 determining whether the voltage level of the main batteries is greater than a predetermined threshold voltage level (Anderson, col. 6, ll. 40-44; Fig. 6).
4. The predetermined voltage threshold level is typically selected in Anderson to be incrementally higher than the minimum operating voltage in order to permit orderly shutdown of the camera (Anderson, col. 2, ll. 20-22 and col. 6, ll. 42-48).
5. Anderson executes the powerfail interrupt function at 652 and performs powerfail powerdown sequence at 654 to protect the camera's current image data if the sensed voltage level is not greater than the threshold level (Anderson, col. 6, ll. 52-54 and 59-64; Fig. 6).
6. Anderson discloses the battery is replaced at 655 (Anderson, col. 6, ll. 65-67).
7. After the battery is replaced at 655, Anderson states the processor (CPU) performs the restart/resume sequence 656 (Anderson, col. 6, l. 67- col. 7, l. 2 and col. 7, l. 58 - col. 8, l. 6; Figs 6 and 8).
8. Tate teaches the battery regains some of its charge when the load is removed and extends battery life (Tate, col. 2, ll. 14-29).

### PRINCIPLES OF LAW

During examination, a claim is given its broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. Of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

Discussing the question of obviousness of a patent that claims a combination of known elements, *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [v. *AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock[, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

*KSR*, 127 S. Ct. at 1740.

If the Examiner's burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

## ANALYSIS

During examination of a patent application, a claim is given its broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *Am. Acad. Of Sci. Tech.*, 367 F.3d at 1364. The Specification defines “battery failure” as “a condition in which the battery charge drops below the level required to operate the device” (FF 1). Thus, giving the phrase, “battery failure,” its broadest

reasonable construction in light of the Specification, we construe the phrase simply to mean the condition where the battery charge falls below a value required to operate the device. However, the phrase, “the level required to operate the device,” in claim 44, has not been defined in the Specification nor have Appellants provided any evidence that the phrase has a particular meaning to those of ordinary skill in the art. Given that no special or particular meaning has been established for “the level required to operate the device,” the phrase will be given its broadest reasonable construction to include a level or voltage value required to operate *all* functions of the device properly.

Anderson discloses a method of powering down a device and recovering from a power failure (FF 2). Step 650 of the process includes determining whether the voltage level of the main batteries is greater than a predetermined threshold voltage level (FF 3). The voltage threshold level is typically selected in Anderson to be incrementally higher than the minimum operating voltage (FF 4). However, Anderson teaches this is the threshold level needed to perform orderly shutdown of the camera or to perform one of the camera’s functions properly. Anderson, thus, also discloses allowing the device to operate until the battery failure occurs as recited in claim 44.

Furthermore, Anderson does not exclude other threshold levels from being set. Anderson discloses the threshold level is *typically* selected to be incrementally higher than the minimum operating voltage (FF 4). Thus, even assuming that Anderson does not explicitly teach battery failure as a condition in which the battery’s charge drops below a level required to operate the device, Anderson suggests to an ordinarily skilled artisan that the threshold level can be set to other levels in order to permit orderly shutdown



of the camera processes (*Id.*) One skilled in the art would have recognized from this teaching in Anderson that selecting as a threshold level where the battery charge drops below the amount required to operate all functions of the device properly, including the powering down processes, would improve the device by permitting orderly shutdown of the camera and protecting image data currently within the camera (FF 4-5).

However, the Examiner relies on the perform restart/power up camera sequence 656 of Figure 6 and its detail in Figure 8 to meet the determining and shutting steps of claim 44 (Ans. 3-4). Significantly, this restart/power up sequence does not occur until *after* battery replacement 655 (FF 6-7). Thus, the restart/powerup sequence will not be determining that *the* battery has insufficient charge upon restart after battery failure and shutting down the device using the residual charge in *the* battery. That is, the battery and its charge used to perform the allowing step is not the same battery used to perform the determining step as claim 44 requires. Furthermore, even though Tate teaches the battery regains some voltage when the load is removed (FF 8), Tate does not cure the deficiency of Anderson which performs the determining and shutting down steps after the battery has been replaced. We, therefore, find that the combination of Anderson and Tate do not teach the determining and shutting down steps of claim 44.

Independent claims 49 and 56 include similar limitations to the determining and shutting steps of claim 44. We, therefore, will not sustain these claim rejections for the above reasons.

Likewise, we will not sustain the Examiner's rejections of claims 45-48, 50-55, 57, and 58 under 35 U.S.C. § 103(a) over Anderson and Tate. These claims depend directly or indirectly from independent claims 44, 49,

or 56. For the reasons described above with respect to claims 44, 49, and 56, we find that the Examiner has not established a prima facie case of obviousness for these claims.

For the foregoing reasons, we find the Examiner has erred in rejecting claims 44-58 under 35 U.S.C. § 103(a) based on Anderson and Tate.

### CONCLUSION

(1) Appellants have not shown the Examiner erred in finding Anderson teaches the step of allowing the device to operate until a battery failure occurs or when the battery's charge drops below a level required to operate the device in rejecting claim 44 under § 103.

(2) The Examiner has erred in finding the combination of Anderson and Tate teach the steps of: (a) determining, upon an attempt to restart the device after the battery failure, that the battery has insufficient charge to support further operation of the device and (b) shutting down the device properly using residual charge in the battery, the battery having recovered sufficiently during a brief period between the battery failure and the attempt to restart the device to support shutting down the device properly in rejecting the independent claims under § 103.

### DECISION

We have not sustained the Examiner's rejection of claims 44-58. Accordingly, the Examiner's rejection of claims 44-58 is reversed.

Appeal 2008-4418  
Application 10/016,199

REVERSED

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